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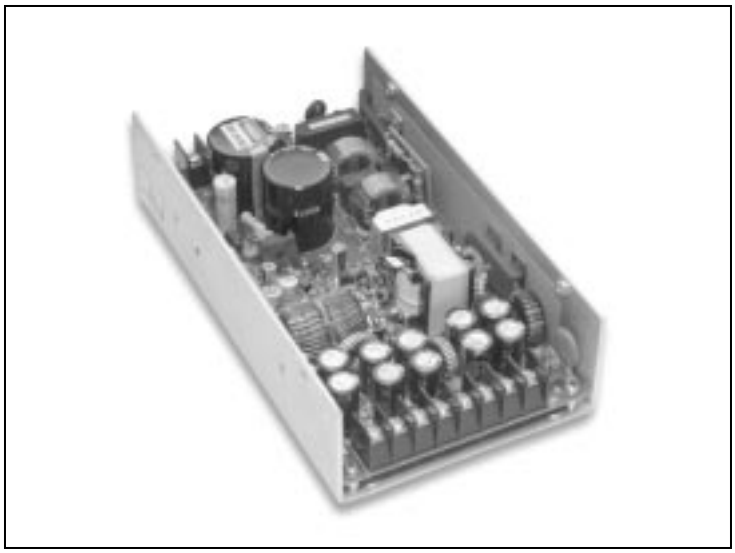
US250 Series 115/230 Auto-Selectable Input 250 Watt Switchers

- 80% typical efficiency
- FCC and VDE class A EMI filter
- Up to 4 outputs
- Compact 8" x 4.5 x 2" size
- UL, cUL, TUV and CE
- Optional cover
- Optional power fail/power good signal
- Optional enable/inhibit
- Available with 24Vdc and 48Vdc input
- Available with medical safety approvals (US250M series)



Jameco Part Number 204564

The US250 series are economical, high efficiency open frame switchers that deliver up to 250W continuous or 300W peak power from one to four outputs. The 115/230Vac auto-selectable input allows them to be used worldwide.

The US250 is one of the *flexibility* series. In addition to the models listed on this sheet, many potential models are available that include full safety agency approval and do not require any non-recurring engineering (NRE) charge. Prototype delivery is just a few weeks.

Flexibility options include a cover, power fail/power good signal and enable/inhibit. Output voltage options are given in the table below. Fully custom models are also available. Contact the factory for details.

US250 models are also available with 24Vdc or 48Vdc inputs. Please see the DP250 Series data sheet for details. Contact the factory for more information about medically-approved models.

Specifications are subject to change without prior notice.

Available Models

Standard Model Number	Medical Model Number	Output	Output Voltage	Output Current Ratings Min[1]	Max[2]	Max[3] (I_m)	Peak[4]
US250-205	US250M-205	V1	+5V	0A	24A	28.5A	30A
		V4	+5V	0A	6A	10A	15A
US250-112	US250M-112	V1	+12V	0A	12.5A	20.8A	25A
US250-124	US250M-124	V1	+24V	0A	6.25A	10.4A	12.5A
US250-201	US250M-201	V1	+5V	1A	20A	25A	30A
		V4	+12V	0A	6A	8A	12A
US250-301	US250M-301	V1	+5V	1A	20A	25A	30A
		V3	−12V	0A	1.5A	2.5A	3A
		V4	+12V	0A	6A	8A	12A
US250-401	US250M-401	V1	+5V	1A	20A	28.5A	30A
		V2	−5V	0A	1.5A	2.5A	3A
		V3	−12V	0A	1.5A	2.5A	3A
		V4	+12V	0A	6A	10A	12A
US250-404	US250M-404	V1	+5V	1A	20A	28.5A	30A
		V2	−12V	0A	1.5A	2.5A	3A
		V3	+12V	0A	1.5A	2.5A	3A
		V4	+24V	0A	3A	6A	8A
US250-433	US250M-433	V1	+5V	1A	22A	28.5A	30A
		V2	+12V	0A	1.5A	2.5A	3A
		V3	−12V	0A	1.5A	2.5A	3A
		V4	+3.3V	0A	7A	10A	15A
Modified standard *flexibility* output options[5]		V1	±2.5 to ±48V[6]		25A	28.5A	
		V2	±2 to ±48V[7]		1.5A	2.5A	
		V3	±2 to ±48V[7]		1.5A	2.5A	
		V4	±2 to ±48V[7]		10A	15A	

Notes:

[1] At least 20% of maximum output current (I_m) is required to maintain stated regulation. Supply remains on at zero load, but regulation is not guaranteed.

[2] Convection cooling, 150W maximum

[3] Forced air cooling, 250W maximum

[4] Peak output, 30 sec max

[5] The US250 series allows very fast *flexible* modified standard design changes within these parameters without non-recurring engineering charges and while retaining safety agency approvals. Please contact the factory for details.

[6] Can be specified in 0.1V increments

[7] Can be specified in 0.75V increments

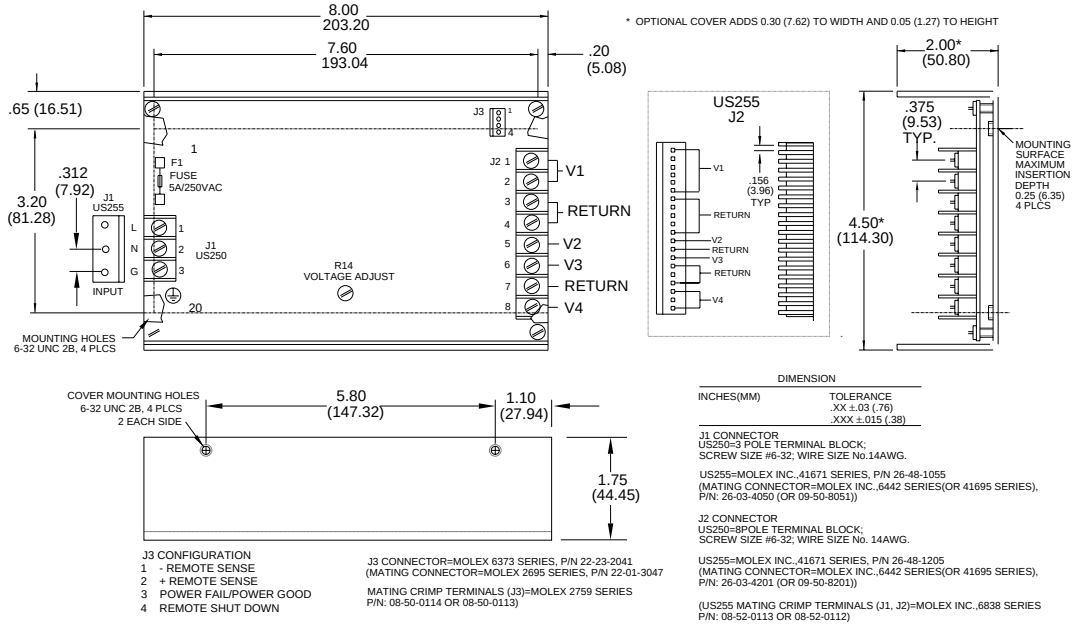
[8] Operational extremes per safety agency testing

Specifications

Specifications are typical at 25°C unless otherwise designated.

Parameter	Limits
Input	
Input Voltage Range	90-250Vac rated 81-130, 180-265Vac operation, auto-selecting[8]
Input Frequency	47 to 63Hz
Input Operating Current	4.9A rms @ 90Vac input, 250W output
Input Surge Current	25A max, cold start @ 25˚C, 250Vac
Efficiency	80% typ at 115Vac input, full power
Output	
Output Power	150W, natural convection cooling 250W with 28CFM forced air cooling 300W peak
Line Regulation	±0.2%, V_{in} (min) to V_{in} (max)
Load Regulation	±1% (V1, 20% to 100% I_o) ±5% (V2, V3, V4, 20% to 100% I_m)
Cross Regulation	±0.5% (V1, 20% to 100% I_m on V2-V4) ±5% (V2, V3, V4, 50% to 100% I_m on V1)
Noise and Ripple	25mV max RMS, 50mV max P-P, on V1=5.0V with full load 0.5% max RMS, 1% max P-P, on V2,V3 & V4 with full load
Power-up Overshoot	5% max, all outputs

Parameter	Limits
Output *(cont'd)*	
Transient Response	V1, for 25% to 75% I_m change, 5% maximum deviation with recovery to 1% within 250μS
Hold-up time	16mS min @ 115Vac input, 250W output
Overvoltage Protection Threshold	130% typical of Vout, all outputs
Power Limit Point	125% typical of max rated power
Control	
Remote Sense Voltage Drop	0.25V max (each lead)
Enable / Inhibit	Inhibit = low Enable = 3.5V to 5V, or open
Environmental	
Operating Temperature Range (full power)	0°C to +50°C
Operating Temperature Range (extended range)	0°C to +70°C Derate linearly from full power at +50°C to half power at +70°C
Storage Temperature Range	−25°C to +85°C
Relative Humidity	5% to 95%, non-condensing
Vibration	0.75G peak, 5Hz to 500Hz. Test three orthogonal axes at 1 octave / min, 5 min dwell at four major resonances
MTBF	140,000 hours typical calculated per MIL STD 217F, at 30˚C ambient
Weight	2 lbs. (0.91 kg)



Digital Power Corporation

flexibility SERIES